

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF:

Juergen SCHUBERT, et al.

SERIAL NO.: 10/656,164

FILED: SEPTEMBER 8, 2003

FOR: EFFICIENT MATTING AGENTS BASED
ON PRECIPITATED SILICAS



GROUP ART UNIT: 1755

EXAMINER: PARVINI, PEGAH

DECLARATION UNDER 37 C.F.R. 1.132

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

SIR:

I, Dr. Juergen Schubert, hereby declare:

1. I am employed by DEGUSSA as chemist and have experience in the field of preparing and analyzing matting compositions.
2. Attached at Tab A are two tables. These tables correspond to Tables 1 and 2 in CA 2255456 ("Siray"). Although Siray's tables did not include values for DBP number and tamped density, the attached tables provide this information. These tables demonstrate that examples 1a-1d and 2a-2c in Siray have a DBP number in the range of 320-333 g/100g and tamped density in the range of 72-85 g/l. Thus, none of these examples has a DBP number in the range of 350-400 g/100g or tamped density in the range of 20-70 g/l.
3. Nothing in Siray would lead to precipitated silica having both low tamped density (20-70 g/l) and high DBP number (350-400 g/100g). Following the preparation methods set forth in Siray, one skilled in the art would obtain silica having tamped density of 72-85 g/l

and a DBP number of 320-333 g/100g. Moreover, Siray does not contain any teaching or suggestion concerning how to modify the preparation methods to achieve precipitated silica having both low tamped density (20-70 g/l) and high DBP number (350-400 g/100g).

4. The statements in paragraph 3 also apply to U.S. patent 5,034,207 ("Kerner"): nothing in Kerner would lead one skilled in the art to precipitated silica having both low tamped density (20-70 g/l) and high DBP number (350-400 g/100g).

5. Page 7 of the present application contains data demonstrating that the invention silicas possess surprisingly improved matting properties over comparison silicas. Examples 1, 3, 4 and 5 correspond to the invention silicas. These examples all have gloss 60° values which are surprisingly lower than the gloss value of Example 2 (DBP number of 333 g/100 g) and the comparative composition containing Acematt HK 450.

6. This difference in matting efficiency, as demonstrated by lower gloss values, between the invention silicas and the comparative silicas was surprising and unexpected given the similarity of the silicas.

7. The improved matting efficiency obtained with the claimed silicas are representative of the present invention. That is, I would expect precipitated silicas having the following characteristics

BET	350 - 550 m ² /g
DBP number	350 - 400 g/100 g
d ₅₀	5 - 15 μm, and
tamped density	20 - 70 g/l.

to possess improved matting efficiency like those of the exemplified invention silicas. I have no reason to expect otherwise.

8. The difference in matting efficiency between the invention silicas and the comparative silicas demonstrates the surprising and unexpected benefit derived from having properties associated with the invention silicas.

9. The improved matting efficiency associated with the invention silicas is commercially significant. Clearly, silicas which possess more effective matting properties are more commercially viable as matting agents than less effective silicas.

10. The undersigned petitioner declares further that all statements made herein of her own knowledge are true and that all statements made on information and belief are believe to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

11. Further deponent sayeth not.

Dr. Jürgen Schubert
Name

J. Schubert
Signature

23. 01. 2007
Date



Tabelle 1

Bsp.	Mühlen- drehzahl	Sichter- dreh- zahl	Sicht- luft	Dosi- rung	Teilchengröße (Malvern)					Glanz		Shear	Rauheit		Viskosität	Schichtdicke	D I	Stampfgewicht	BET-Oberfläche	DBP (wasserfrei)
					d 4,3	d 10	d 50	d 80	µm	60°	85°		RZD	Ra						
	U/min	U/min	m³/h	kg/h											s	µm		g/l	m²/g	g/100 g
1 a	10700	11000	175	10	8,34	4,48	7,03	12,89	23	23,8	72,0	48,2	2,27	0,27	38	30	0,598	82	509	320
1 b	10000	10500	180	15	9,78	4,53	7,11	15,84	27	21,8	70,3	48,5	2,37	0,28	38	30	0,795	85	506	322
1 c	10000	9000	200	30	9,34	4,52	8,03	13,87	28	24,7	67,9	43,2			34	28	0,582	80	515	333
1 d	10000	10000	145	15	9,97	4,27	6,78	16,13	33	26,0	73,4	47,4			38	29	0,875	79	510	328

Tabelle 2

Bsp.	Sichter- dreh- zahl	Mahl- luft	Dosi- rung	Teilchengröße (Malvern)					Glanz		Shear	Rauheit		Viskosität	Schichtdicke	D I	Stampfgewicht	BET-Oberfläche	DBP (wasserfrei)
				d 4,3	d 10	d 50	d 80	µm	60°	85°		RZD	Ra						
	U/min	m³/h	kg/h											s	µm		g/l	m²/g	g/100 g
2 a	11000	150	20	6,49	3,74	5,95	9,7	23	16,8	68,4	49,8	2,24	0,28	38	40	0,5	72	502	328
2 b	11000	150	40	12,9	3,69	6,68	24,3	23	21,8	68,0	38,1	2,00	0,24	39	39	1,54	79	508	330
2 c	10000	150	20	11,5	4,99	8,47	17,9	27	16,6	68,8	42,2	3,24	0,42			0,762	75	510	325
2 d	8000	150	30	12,2	5,76	11,5	19,5	39	15,8	43,8	28,2	4,30	0,55	38	42	0,597	75	506	327
2 e	11000	150	30	7,8	3,55	6,1	12,44	24	21,1	55,4	34,3					0,783	73	505	330

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